should to some extent succeed in estimating these quantitatively, it does not appear hopeless to succeed in estimating, from tho composition of the gas itself, some explanation as to the occurrences which yield other substances in addition to C.
If in addition to C the fuel also contained so-called free II, and incidentally assumed a quantity corresponding to 0"5 cubic metro II per kilogramme (1, it is clear that more 0, and thus moro air, is necessary For tho combustion of an. amount of fuol containing 1 kilogramme 0. There will be required—
For 1 kilo^nmimo <1 1 '.SO cubic metro () f 7'00 cubic, metres N „ ()•.*» ,,
II 0-L»r> ,, O-fO-iM „ N
Or a tut ul of . . iMl „ Of 7'SM ,, N
and in tho products of combustion of 1, kilogramme 0 there will bo found l"Hf) cubic motro (!()»> and 71)4 cubic metres N.
Tho ratio of ('()•• to N has now bocomo altered ; the amount; of nitrogen has increased. It has increased by 3*7(>2 times tho amount of oxygon which was necessary for tho combustion of tho froo hydrogen. Thus the ratio of C0«j to N is a criterion for tho ovont of tho presence of so-called free hvdrngon in tho fuol, and if tho products of combustion are produced from a gasooua fuol, a proof therefore that free II ((/no lutH ln'<*n jtrwHt in tin* comhii-xtihle </as and in an amount which can bo ostinwtod from tho ratio of OOa to N in the products of comploto combustion.
It muni bontu^ b(» shown from this that tho content of free II found by thin method in throughout not identical with the content of froo M, which will bo found from an analysis of the gas ink) its olonumtH, but almost never identical with it. Novorlholoss, tho (»,stiniation of tho same by the method given from tho products of complete combustion in able to have wmio valuo for examination of the fuol, sinco it enables one to aHcortaiu by ci)cpotimont the quantity of hydrogen which IB onabk$d to be,givon off from the fuel actually incombustible form.
Now, howovor, tho hydrogen which constitutes the principal bjisirt of tho bituminous ingredients does not go off in the free state during the degasification process, but a large